

**FINAL
EMERGENCY RESPONSE
SAMPLING AND ANALYSIS REPORT**

**SUMMERVILLE MILL FIRE
SUMMERVILLE, CHATOOGA COUNTY, GEORGIA**

Revision 0

Prepared for

**U.S. ENVIRONMENTAL PROTECTION AGENCY
Region 4
Atlanta, Georgia 30303**



Contract No.	:	EP-W-05-054
TDD No.	:	TTEMI-05-001-0181
Date Prepared	:	January 10, 2013
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1.0 INTRODUCTION

Under Contract Number (No.) EP-W-05-054, Technical Direction Document (TDD) No. TTEMI-05-001-0181, the U.S. Environmental Protection Agency (EPA) directed the Tetra Tech Superfund Technical Assessment and Response Team (START) to prepare a sampling and analysis report (SAR) for an emergency response (ER) at the Summerville Mill Fire. The purposes of the SAR are to specify the type and objective of samples collected during the ER, as well as the sampling methodology and decision logic followed.

All activities and procedures discussed and described in this SAR were conducted in accordance with the approved Tetra Tech Quality Management Plan (Reference [Ref.] 1). Tetra Tech conducted activities in accordance with the prescribed guidance documents listed below to further ensure that all data quality objectives (DQO) were met.

- EPA Region 4, Science and Ecosystem Support Division (SESD), Field Branches Quality System and Technical Procedures (FBQSTP) (Refs. 2; 3; 4)
- EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846) (Ref. 5)
- EPA Method 1668C Chlorinated Biphenyl Congeners in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS (modified for air) (Ref. 6)
- EPA 40 Code of Federal Regulations (CFR), Part 763 – Asbestos, Appendix A to Subpart E – Interim Transmission Electron Microscopy (TEM) Analytical Method, July 1, 2007 Edition (Ref. 7)
- EPA National Functional Guidelines (NFG) for Inorganic Superfund Data Review, USEPA-540-R-10-011, January 2010 (Ref. 8)
- EPA NFGs for Superfund Organic Methods Data Review, USEPA-540-R-08-01, June 2008 (Ref. 9)
- EPA Guidance on Systematic Planning Using the Data Quality Objectives Process, EPA QA/G-4, February 2006 (Ref. 10)
- Tetra Tech START Program Level Quality Assurance Project Plan (QAPP), May 2012 (Ref. 11)

These guidance documents specifically apply to sampling locations, sample types, sampling procedures, use of data, data types, field quality assurance and quality control (QA/QC) samples, analytical parameters, and data validation.

Activities at the Summerville Mill Fire site included the following:

- Conducted air monitoring
- Collected samples to evaluate the presence or absence of hazardous substances in air, water, and soil to protect human health and the environment during ER activities
- Prepared geographic information system (GIS) maps

The remainder of this SAR for ER activities at the Summerville Mill Fire site is organized as follows:

- Section 2.0 presents the site background and a timeline of events.
- Section 3.0 summarizes field sampling activities, including sampling locations. This section also describes sampling methods.
- Section 4.0 describes the data quality objectives.
- Section 5.0 describes the analytical methodology.
- Section 6.0 presents the field team and its responsibilities.
- Section 7.0 discusses disposal of investigation-derived waste (IDW).
- Section 8.0 provides a list of references consulted.
- Appendix A of this SAR provides a figure. The health and safety plan (HASP) is included as Appendix B.

2.0 SITE BACKGROUND AND TIMELINE OF EVENTS

The Summerville Mill Fire site is a plastic recycling facility housed in an old mill (North Georgia Textile Supply Company) encompassing about 10 acres of land that caught fire the evening of July 27, 2012.

The facility primarily stored shredded, and to be recycled, plastics. Multiple types of plastic were stored at the site in large quantities, including polyethylene terephthalate (PET) and polyvinyl chloride (PVC).

Chattooga County Emergency Management Agency (EMA) personnel and local officials ordered an evacuation within a 0.25-mile radius of the facility and within 0.5 mile downwind of the facility.

Residents within 5 miles were advised to shelter in place. While multiple structures were threatened by the blaze, the fire was primarily fed by the PET (Ref. 12).

EPA On-Scene Coordinator (OSC) Leo Francendese arrived on site just before midnight on July 27, 2012. EPA OSC Kevin Eichinger and Tetra Tech START arrived around 0200 on July 28, 2012. Tetra Tech START immediately began on-scene monitoring and established a perimeter to determine the effectiveness of the evacuation and whether additional public health advisories were warranted. Firefighting activities throughout the night reduced, but did not extinguish the blaze. At approximately 0830, the blaze reignited with increased intensity, moved along a previously unburned section of the site, and threatened a warehouse containing a large quantity of PVC. Hundreds of firefighters from

surrounding communities mobilized on the morning of July 28, 2012 to combat the renewed blaze and were able to prevent the fire from consuming the PVC warehouse. In addition, heavy equipment, provided by the EPA Region 4 Emergency and Rapid Response Services (ERRS) contractor, began operating in conjunction with firefighting activities to provide debris separation to fully extinguish the plastic fuel sources and prevent re-ignition (Ref. 12).

Because copious amounts of water were needed to fight the fire, OSC Francendese gave the City of Summerville permission to withdraw water from a nearby creek, Raccoon Creek, beyond normal permitted levels. The City of Summerville's drinking water intake is located on Raccoon Creek upstream of the fire; therefore, domestic water need considerations were balanced with firefighting resource needs. Water was withdrawn from Raccoon Creek approximately 3,000 feet downstream from the site, which facilitated continuous visual monitoring by firefighter personnel, who reported no observable impacts to the creek (i.e. no dead fish, no discoloration, no debris, etc.) (Ref. 12).

During the morning of July 29, 2012, Tetra Tech START conducted a radiation survey using a Ludlum Model 3. The results of the survey indicated no detections above background. At approximately noon on July 29, 2012, OSC Francendese and Tetra Tech START met with Chattooga County EMA personnel and Unified Command. Following a review of air monitoring data collected the previous night, public health advisories were reduced to a 0.25-mile radius "shelter in place advisory" and a 2-mile radius "restrict outdoor activities" advisory (Ref. 12).

Firefighters began using 1 percent surfactant during the morning of July 29, 2012, and by that afternoon, substantial progress had been made with the elimination of open flames (Ref. 12).

The yards of two residential properties were flooded as a consequence of necessary firefighting activities. On the evening of July 29, 2012, OSC Francendese, upon request from Unified Command, tasked ERRS to pump and reroute the water back to firefighting operations, as well as create on-site drainage modifications to prevent future flooding during firefighting operations. In addition, Tetra Tech START collected water samples from the residential properties (Ref. 12).

On the morning of July 30, 2012, OSC Francendese met with Chattooga County EMA personnel and Unified Command to review air monitoring data from the previous night. As a result, public health advisories were reduced to a 0.25-mile radius "avoid outdoor smoke" advisory. Fire suppression activities continued in conjunction with heavy equipment to eliminate re-ignition and minimize

smoke. By the afternoon of July 30, 2012, approximately 10 million gallons of water were utilized for firefighting activities (Ref. 12).

Also on July 30, 2012, Tetra Tech START collected two soil samples from the previously flooded residential properties below the high water mark after the water receded. Tetra Tech START also collected air samples within 0.25-mile of the site. Air monitoring activities were also moved to within a 0.25-mile radius of the site (Ref. 12).

On July 31, 2012, Tetra Tech START collected air samples for asbestos analysis to ensure the health and safety of the public and responders. Air monitoring activities throughout the night indicated good to moderate air quality. After review of air monitoring data from the previous night, all public health advisories were lifted (Ref. 12).

On the morning of July 31, 2012, ERRS completed removing all water from the two flooded residences. Firefighting activities were minimal and debris segregation and demolition activities ceased. EPA and Tetra Tech START ceased on-site activities (Ref. 12).

3.0 MONITORING AND SAMPLING ACTIVITIES

Tetra Tech START conducted air monitoring and collected air, surface water, and soil samples at the Summerville Mill Fire site to assist EPA and local authorities with protecting human health and the environment. Figure 1 in Appendix A depicts the monitoring and sampling locations.

Sampling and field QA/QC procedures for ER field activities were conducted in accordance with the EPA SESD FBQSTP (Refs. 2; 3; 4). Laboratory QA/QC procedures were conducted in accordance with the EPA SESD FBQSTP; the EPA SW-846 Methods; EPA Method 1668C; EPA 40 CFR, Part 763 – Asbestos, Appendix A to Subpart E – Interim TEM Analytical Method, July 1, 2007 Edition; the EPA NFGs for Inorganic Superfund Data Review, USEPA-540-R-10-011, January 2010; the EPA NFGs for Superfund Organic Methods Data Review, USEPA-540-R-08-01, June 2008; and the Tetra Tech START Program Level QAPP, May 2012 (Refs. 2 through 11).

3.1 AIR MONITORING

DataRam monitors were utilized to conduct air quality monitoring and were placed at the site to determine exposure levels to on-site personnel. DataRam monitors measure the amount of particulates in the air. For this response, the DataRam monitors were set for PM 2.5, meaning only particulates

measuring 2.5 microns in size or less (i.e. respirable particulates) were measured by the monitor. DataRam monitors were also placed downwind of the site initially to determine if the “shelter in place” advisory was necessary. The locations of the DataRam monitors were chosen based on plume models provided by the Interagency Modeling and Atmospheric Assessment Center. When DataRam results indicated that air quality in an area was good or moderate, advisories were lifted. As the advisories were lifted, the DataRam monitors were moved inward to determine if the evacuation advisory was still necessary.

Chlorine is a by-product of PVC combustion; therefore, on July 28, 2012, when the PVC warehouse was threatened by the fire, chlorine monitors were placed at the fenceline between the fire and the command post, at the ladder truck, and inside the ERRS track hoes. The chlorine monitors indicated some low-level detections; therefore, chlorine monitoring continued through July 30, 2012 when chlorine was no longer detected.

3.2 AIR SAMPLING

On July 30, 2012, Tetra Tech START conducted two rounds of air sampling for semivolatile organic compounds (SVOC) and polychlorinated biphenyls (PCB). Air samplers were collocated with the DataRams for the purpose of establishing a correlation between air quality levels and SVOC or PCB concentrations. The goals were to demonstrate that air quality monitors were a good indicator of the extent of the plume, and that SVOCs and PCBs were not present in the smoke, thereby, establishing that the particulates in the smoke were the primary health concern. Although no asbestos-containing materials were observed at the site, Tetra Tech START collected asbestos air samples as a precaution for responder and public safety to confirm that no asbestos became airborne during debris separation activities. Air samples were collected in accordance with the EPA Region 4 SESD FBQSTP for Ambient Air Sampling (SESDPROC-303-R4) (Ref. 2).

3.3 SURFACE WATER AND SOIL SAMPLING

Due to the topography of the site, firefighting water flowed both to the east and to the west creating two retention areas. The western retention area flowed directly into Raccoon Creek and the eastern retention area encompassed two neighboring residential properties. Two surface water samples, one from each retention area, were collected for volatile organic compound (VOC), SVOC, PCB, pesticide, herbicide, and metals analyses. The results of the analyses indicated that several VOCs, SVOCs, and metals exceeded removal action levels. Because the water on these properties was being pumped to nearby

Raccoon Creek, Tetra Tech START collected three surface water samples from the creek, one upstream of the site and two downstream of the site, for VOC, SVOC, and metals analyses. Surface water samples were collected from the surface of the water by partially submerging the sampling container into the water. Surface water samples were collected in accordance with the EPA Region 4 SESD FBQSTP for Surface Water Sampling (SESDPROC-201-R1) (Ref. 3).

After the water on the two residential properties was pumped to Raccoon Creek, two surface soil samples, one from each property, were collected to determine whether the water had deposited any contaminants onto the surface soil. Surface soil samples were collected from 0 to 3 inches below ground surface using stainless steel spoons and aluminum pans. Soil samples were collected in accordance with the EPA Region 4 SESD FBQSTP for Soil Sampling (SESDPROC-300-R2) (Ref. 4).

4.0 DATA QUALITY OBJECTIVES

DQOs for the Summerville Mill Fire ER were established to define the quantity and quality of the data collected to support the objective of the ER, which was to collect samples to evaluate the presence or absence of hazardous substances in air, water, and soil to protect human health and the environment. Analytical results were compared with removal action levels. Initial acceptance of the data was decided by the Tetra Tech quality assurance data manager through a cursory review of the preliminary data. Any rejected data and the reasons for rejection will be summarized in the data validation report. QA/QC samples were collected during the ER to check for variations with sample collection, sample handling, and laboratory analysis.

5.0 ANALYTICAL METHODOLOGY

Air samples were submitted to Analytical Environmental Services, Inc. (AES) for asbestos analysis and were analyzed in accordance with EPA 40 CFR, Part 763 – Asbestos, Appendix A to Subpart E – Interim TEM Analytical Method (Ref. 7). Air samples were also submitted to Enthalpy Laboratories for SVOC analysis and were analyzed in accordance with EPA SW-846 Method 8270D Modified (Ref. 5). In addition, air samples were submitted to SGS/Analytical Perspectives for PCB analysis and were analyzed in accordance with EPA Method 1668C (modified for air) (Ref. 6).

Surface water samples were submitted to AES for VOC, SVOC, PCB, pesticide, herbicide, and metals analyses and were analyzed in accordance with EPA SW-846 Methods 8260B, 8270D, 8082A, 8081B, 8151A, 6010C, and 7470A (mercury) (Ref. 5).

Soil samples were submitted to AES for VOC, SVOC, PCB, pesticide, herbicide, and metals analyses and were analyzed in accordance with EPA SW-846 Methods 8260B, 8270D, 8082A, 8081B, 8151A, 6010C, and 7471B (mercury) (Ref. 5).

The analytical data packages will be validated by the Tetra Tech quality assurance data manager. Data validation will be conducted in accordance with the EPA NFGs for Inorganic Superfund Data Review, USEPA-540-R-10-011, January 2010; and the EPA NFGs for Superfund Organic Methods Data Review, USEPA-540-R-08-01, June 2008 (Refs. 8; 9).

6.0 PROJECT PERSONNEL

Field team members and their responsibilities were as follows:

- Randy Mayer – Project Manager
- Bryan Vasser – Day Shift Lead
- Didi Fung – Night Shift Lead
- James Gooch – Day Shift Team Member
- Quinn Kelley – Day Shift Team Member
- John Schendel – Day Shift Team Member
- Brian Croft – Night Shift Team Member
- Chris Jones – Night Shift Team Member
- Leslie Shaver – Night Shift Team Member

All specific training requirements for personnel are addressed in the HASP. The health and safety protocol that was followed during this ER is described in the HASP provided in Appendix B.

7.0 DISPOSAL OF INVESTIGATION-DERIVED WASTE

IDW generally consisted of disposable latex gloves, plastic bags, and aluminum pans. These items were used mainly for sample collection, to prevent cross-contamination, and to provide personnel protection and sanitary conditions during sampling. Disposable IDW was double-bagged and deposited in an industrial waste container as directed in the IDW Management Guidance Manual and EPA Region 4 SESD Field Branches Quality System and Technical Procedure for Management of IDW, SESDPROC-202-R2 (Refs. 13; 14).

8.0 REFERENCES

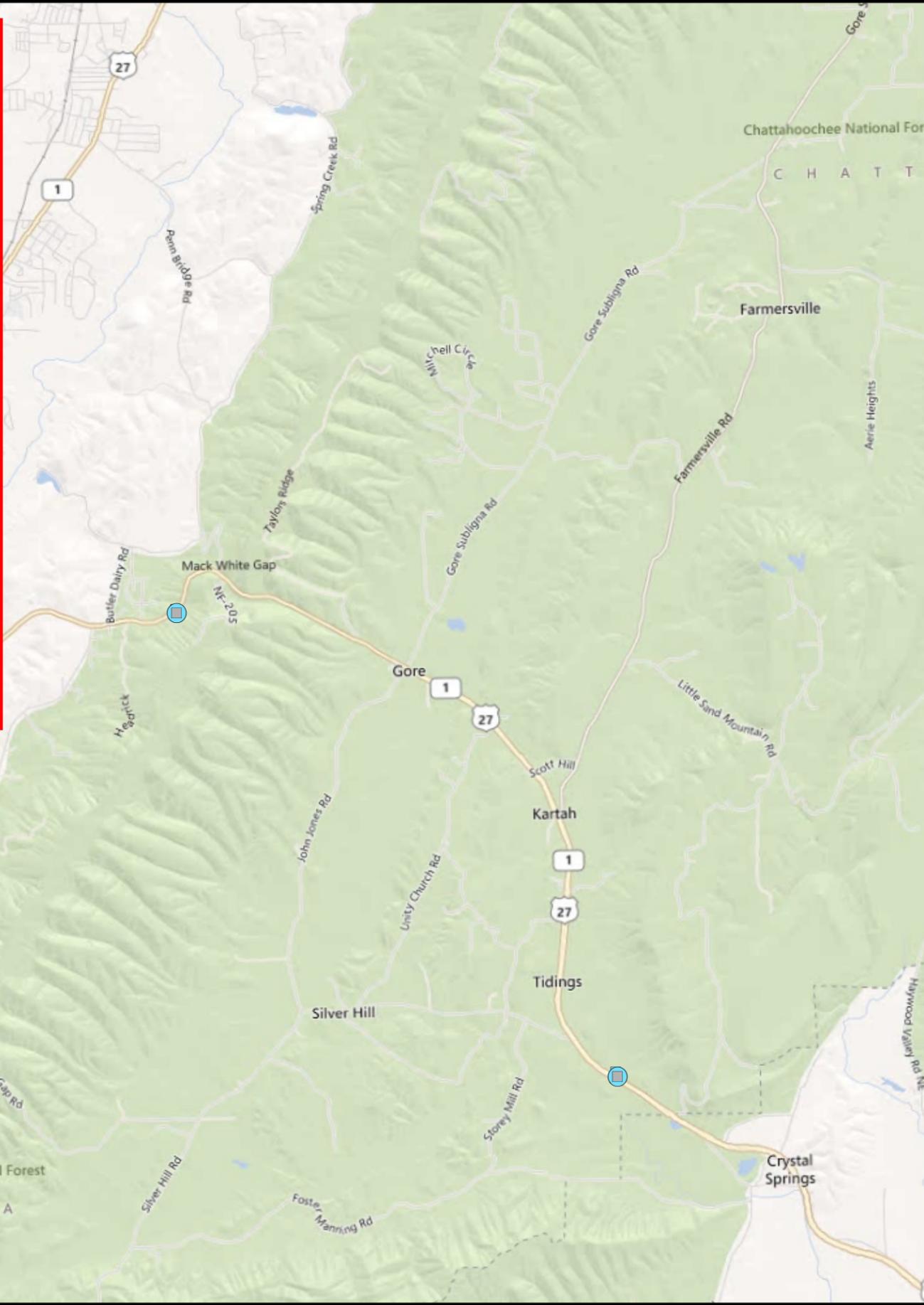
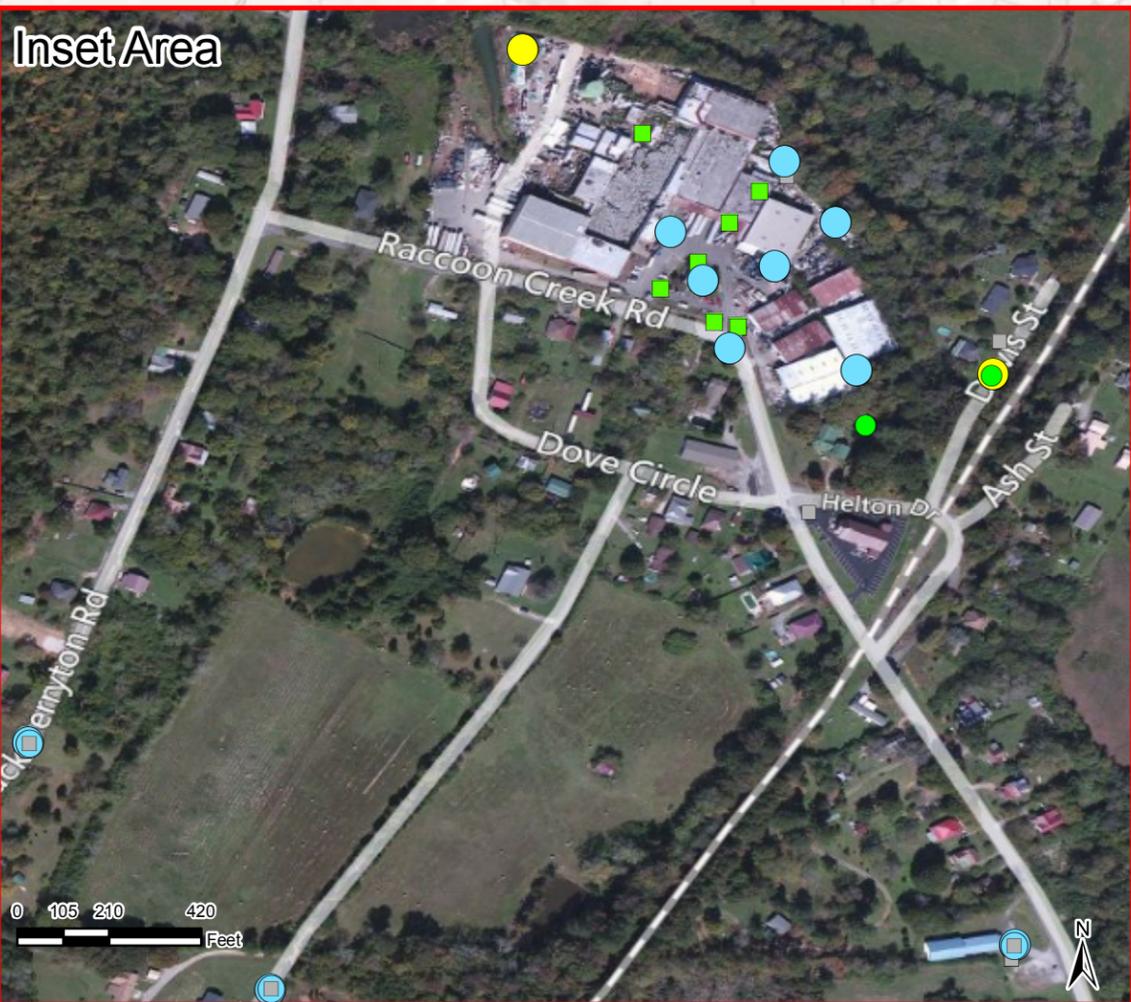
1. Tetra Tech EM Inc. (Tetra Tech), Quality Management Plan, Revision 2. November 2009.
2. U.S. Environmental Protection Agency (EPA), Region 4 Science and Ecosystem Support Division (SESD) Field Branches Quality System and Technical Procedure for Ambient Air Sampling, SESDPROC-303-R4. January 2011. Accessed on-line at <http://www.epa.gov/region4/sesd/fbqstp/Ambient-Air-Sampling.pdf>.
3. EPA, Region 4 SESD Field Branches Quality System and Technical Procedure for Surface Water Sampling, SESDPROC-201-R1. November 2007. Accessed on-line at <http://www.epa.gov/region4/sesd/fbqstp/Surfacewater-Sampling.pdf>.
4. EPA, Region 4 SESD Field Branches Quality System and Technical Procedure for Soil Sampling, SESDPROC-300-R2. December 2011. Accessed on-line at <http://www.epa.gov/region4/sesd/fbqstp/Soil-Sampling.pdf>.
5. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846). Accessed on-line at <http://www.epa.gov/osw/hazard/testmethods/sw846/online/index.htm>.
6. EPA Method 1668C Chlorinated Biphenyl Congeners in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS, April 2010. Accessed on-line at http://water.epa.gov/scitech/methods/cwa/upload/M1668C_11June10-PCB_Congeners.pdf.
7. EPA. 40 Code of Federal Regulations, Part 763 – Asbestos, Appendix A to Subpart E – Interim Transmission Electron Microscopy Analytical Method. July 1, 2007 Edition. Accessed on-line at <http://www.epa.gov/asbestos/pubs/2003pt763.pdf>.
8. EPA. Contract Laboratory Program (CLP) National Functional Guidelines for Inorganic Superfund Data Review, EPA540/R-10/011. January 2010.
9. EPA. CLP National Functional Guidelines for Superfund Organic Methods Data Review, EPA540/R-08/01, June 2008.
10. EPA. Guidance on Systematic Planning Using the Data Quality Objectives Process, EPA QA/G-4. February 2006. Accessed on-line at <http://www.epa.gov/quality/qs-docs/g4-final.pdf>.
11. Tetra Tech, Superfund Technical Assessment and Response Team (START) III, EPA Region 4. Quality Assurance Project Plan, Revision 2. May 2012.
12. EPA, Region 4. Pollution/Situation Report #3, Summerville, Georgia. July 31, 2012.
13. EPA, Office of Emergency and Remedial Response. Management of Investigation-Derived Wastes During Site Inspection, EPA/540/G-91/009. May 1991.
14. EPA, Region 4 SESD Field Branches Quality System and Technical Procedure for Management of Investigation Derived Waste. October 2010. Accessed on-line at <http://www.epa.gov/region4/sesd/fbqstp/Management-of-IDW.pdf>.

APPENDIX A

FIGURE

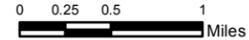
(One Page)

Inset Area



Legend

- Soil Sampling Location
- Water Sampling Location
- Air Sampling Location
- PM-2.5 Monitoring Location
- Chlorine Monitoring Location



Map Source:
Bing Streets Map, 2012
Bing Maps Hybrid Aerial Imagery, 2012



United States Environmental Protection Agency Region 4

Figure 1:
Monitoring and Sampling Locations
July, 2012

TDD Name: Summerville Mill Fire
TDD No.: TTEMI-05-001-0181
City: Summerville **County:** Chattooga **State:** Georgia



Date: 8/8/2012
Analyst: ray.yeager

APPENDIX B
HEALTH AND SAFETY PLAN
(16 Pages)

Site Name: Summerville Mill Fire	Site Contact: Randy Mayer	Telephone: 225-933-4534												
Location: 850 Raccoon Creek Road, Summerville, Georgia	Client Contact: Leo Francendese	Telephone: 404-562-8772												
EPA ID No. NA	Prepared By: Randy Mayer	Date Prepared: 07/27/12												
Project No. TTEMI-05-001-0181	Dates of Activities: July 27 to 31, 2012	Emergency Response <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No												
<p>Objectives:</p> <ul style="list-style-type: none"> • Conduct air monitoring • Collect air, water, and soil samples as necessary • Provide support as necessary 														
<p>Site Type: <i>Check as many as applicable.</i></p> <table style="width: 100%; border: none;"> <tr> <td><input checked="" type="checkbox"/> Active</td> <td><input type="checkbox"/> Landfill</td> <td><input type="checkbox"/> Inner-City</td> </tr> <tr> <td><input type="checkbox"/> Inactive</td> <td><input type="checkbox"/> Railroad</td> <td><input checked="" type="checkbox"/> Rural</td> </tr> <tr> <td><input checked="" type="checkbox"/> Secured</td> <td><input checked="" type="checkbox"/> Residential</td> <td><input type="checkbox"/> Remote</td> </tr> <tr> <td><input type="checkbox"/> Unsecured</td> <td><input type="checkbox"/> Industrial</td> <td><input type="checkbox"/> Other (<i>specify</i>)</td> </tr> </table>			<input checked="" type="checkbox"/> Active	<input type="checkbox"/> Landfill	<input type="checkbox"/> Inner-City	<input type="checkbox"/> Inactive	<input type="checkbox"/> Railroad	<input checked="" type="checkbox"/> Rural	<input checked="" type="checkbox"/> Secured	<input checked="" type="checkbox"/> Residential	<input type="checkbox"/> Remote	<input type="checkbox"/> Unsecured	<input type="checkbox"/> Industrial	<input type="checkbox"/> Other (<i>specify</i>)
<input checked="" type="checkbox"/> Active	<input type="checkbox"/> Landfill	<input type="checkbox"/> Inner-City												
<input type="checkbox"/> Inactive	<input type="checkbox"/> Railroad	<input checked="" type="checkbox"/> Rural												
<input checked="" type="checkbox"/> Secured	<input checked="" type="checkbox"/> Residential	<input type="checkbox"/> Remote												
<input type="checkbox"/> Unsecured	<input type="checkbox"/> Industrial	<input type="checkbox"/> Other (<i>specify</i>)												
<p>Project Scope of Work and Site Background</p> <p>The Summerville Mill Fire site is a plastic recycling facility housed in an old mill (North Georgia Textile Supply Company) encompassing about 10 acres of land that caught fire the evening of July 27, 2012. The facility primarily stored shredded, and to be recycled, plastics. Multiple types of plastic are stored at the site in large quantities, including polyethylene terephthalate (PET) and polyvinyl chloride (PVC). Chattooga County Emergency Management Agency (EMA) personnel and local officials ordered an evacuation within a 0.25-mile circumference of the facility and 0.5 mile downwind of the facility. Residents within 5 miles were advised to shelter in place.</p> <p>Tetra Tech has been tasked to conduct emergency response activities to ensure the protection of human health and the environment.</p>														
<p>Health and Safety Approver Comments or Additional Instructions: Always wear overboots or disposable booties on metals sites. Avoid ground contact and dust-generating activities and suspend operations if visible dust is present. Use good chemical hygiene, including frequent hand washing. Type 2 personal floatation device required when within 15 feet of water that is greater than 3 feet deep or that is swiftly moving.</p>														
<p>Health and Safety Plan Approver Signature:</p>		<p>Date:</p>												

Note: A minimum of two persons with appropriate training and medical surveillance must be on site for any fieldwork subject to Level 2 HASP requirements.

Note: A detailed site sketch or figure may be included on Page 10 of 12.

Initial Isolation and Protective Action Distances (for emergency response operations only): NA

Initial Isolation Distance: This zone should extend in all directions; 660 feet for unknown hazards and 0.5 mile for tanker truck or rail car incidents.

NOTE: Keep a maximum distance away for unknown sites until the identity of the materials is determined.

Subsequent Isolation and Protection Action Zones Based on Air Monitoring Results:

NOTE: Distance at sites with unknown hazards should be increased, if necessary, based on air monitoring results.

Wind Speed and Direction (Approach from upwind)		Temperature (°F)	Relative Humidity (%)	Probability of Precipitation (%)	Weather Forecast (such as partly cloudy, snow, etc.)
Speed (mph):	From Direction:				

On-Site Supplies: First Aid Kit Fire Extinguisher Air Horn Oral Thermometer Noise Dosimeter

Known or Anticipated Site Hazards or Concerns: (Hazards covered by existing Safe Work Practices are listed on the next page)

<input type="checkbox"/> Railroad Right-of-Way (stay >50 ft from centerline)	<input checked="" type="checkbox"/> Overhead utilities	<input type="checkbox"/> Energized electrical systems
<input type="checkbox"/> Onsite laboratory	<input checked="" type="checkbox"/> Buried Utilities	<input type="checkbox"/> Portable hand tool use
<input checked="" type="checkbox"/> Explosion or fire hazard	<input type="checkbox"/> Surface or underground storage tanks	<input type="checkbox"/> Portable electrical tool use
<input checked="" type="checkbox"/> Oxygen deficiency	<input checked="" type="checkbox"/> General slips, trips, falls	<input type="checkbox"/> Machine guarding
<input type="checkbox"/> Unknown or poorly characterized chemical hazards	<input checked="" type="checkbox"/> Uneven, muddy, rugged terrain	<input type="checkbox"/> Portable fire extinguisher use
<input checked="" type="checkbox"/> Inorganic chemicals	<input type="checkbox"/> Lift (man lift, cherry picker) use	<input type="checkbox"/> Driving commercial vehicles
<input checked="" type="checkbox"/> Organic chemicals	<input type="checkbox"/> Industrial truck (forklift) use	<input type="checkbox"/> Driving personal vehicles
<input type="checkbox"/> Chemical warfare materiel	<input type="checkbox"/> Wood or metal ladder use	<input type="checkbox"/> Scientific diving operations
<input type="checkbox"/> Compressed Gas Cylinders	<input type="checkbox"/> Dangerous goods shipped by air	<input type="checkbox"/> Injury and Illness Prevention Program (California only)
<input type="checkbox"/> Asbestos	<input type="checkbox"/> Elevated work (over 6' high)	<input type="checkbox"/> Ergonomics (California only)
<input checked="" type="checkbox"/> Respirable particulates	<input checked="" type="checkbox"/> Heavy equipment use or operation	<input type="checkbox"/> Work in strip or shaft mines
<input type="checkbox"/> Respirable silica	<input type="checkbox"/> Construction work	<input type="checkbox"/> Client-specific safety requirements (attach to HASP)
<input type="checkbox"/> Blasting and explosives	<input type="checkbox"/> Excavation or trenching	<input type="checkbox"/> ATV use
<input type="checkbox"/> Non-ionizing radiation (lasers, radiofrequencies, UV)	<input type="checkbox"/> Benching, shoring, bracing	<input type="checkbox"/> Methamphetamine lab
<input type="checkbox"/> Ionizing radiation (alpha, beta, gamma, etc.)	<input type="checkbox"/> Scaffold use	<input checked="" type="checkbox"/> Working over or near water
<input checked="" type="checkbox"/> Heat stress	<input type="checkbox"/> High noise	<input type="checkbox"/> Mold
<input type="checkbox"/> Cold stress	<input type="checkbox"/> Grinding operations	<input checked="" type="checkbox"/> Biological hazards

Explosion or Fire Potential: High Medium Low Unknown

Chemical Products Tetra Tech EM Inc. Will Use or Store On Site: (Attach a Material Safety Data Sheet [MSDS] for each item.)

- | | | | |
|---|---|--|---|
| <input checked="" type="checkbox"/> Alconox or Liquinox | <input checked="" type="checkbox"/> Calibration gas (Methane) | <input checked="" type="checkbox"/> Hydrogen gas | <input type="checkbox"/> Isopropyl alcohol |
| <input checked="" type="checkbox"/> Hydrochloric acid (HCl) | <input checked="" type="checkbox"/> Calibration gas (Isobutylene) | <input type="checkbox"/> Household bleach (NaOCl) | <input checked="" type="checkbox"/> HazCat Kit |
| <input checked="" type="checkbox"/> Nitric acid (HNO ₃) | <input type="checkbox"/> Calibration gas (Pentane) | <input type="checkbox"/> Sulfuric acid (H ₂ SO ₄) | <input type="checkbox"/> Mark I Kits (<i>number?</i>) _____ |
| <input type="checkbox"/> Sodium hydroxide (NaOH) | <input checked="" type="checkbox"/> Calibration gas (4-gas mixture) | <input type="checkbox"/> Hexane | <input type="checkbox"/> Other (<i>specify</i>) _____ |

WARNING: Eyewash solution shall be readily available on ALL projects where corrosives (acids or bases) are used, including sample preservatives

Applicable Safety Programs and Safe Work Practices (SWP). Attach to HASP:

- DCN 4-03 Demolition and Decontamination
- DCN 4-05 Trenching and Excavation Safety
- DCN 4-08 Asbestos Protection Program
- DCN 4-09 Haulage and Earth Moving
- DCN 4-10 Lead Protection Program
- SWP DCN 5-01 General Safe Work Practices
- SWP DCN 5-02 General Safe Work Practices HAZWOPER
- SWP DCN 5-03 Safe Work Practices for Office Employees
- SWP DCN 5-04 Safe Drilling Practices
- SWP DCN 5-05 Safe Direct Push (GeoProbe) Practices
- SWP DCN 5-06 Working Over or Near Water
- SWP DCN 5-07 Use of Heavy Equipment
- SWP DCN 5-08 Special Site Hazards (Firearms, Remote Sites, Mines, aircraft, etc.)
- SWP DCN 5-09 Safe Electrical Work Practices
- SWP DCN 5-10 Fall Protection Practices
- SWP DCN 5-11 Portable Ladder Safety
- SWP DCN 5-12 Drum and Container Handling Practices
- SWP DCN 5-13 Flammable Hazards and Ignition Sources
- SWP DCN 5-14 Spill and Discharge Control Practices
- SWP DCN 5-15 Heat Stress
- SWP DCN 5-16 Cold Stress
- SWP DCN 5-17 Biohazards
- SWP DCN 5-18 Underground Storage Tank Removal Practices
- SWP DCN 5-19 Safe Lifting Procedures
- SWP DCN 5-22 Hydrographic Data Collection
- SWP DCN 5-23 Permit-Required Confined Space Entry Practices
- SWP DCN 5-24 Non-Permit-Required Confined Space Entry Practices
- SWP DCN 5-26 Prevention of Sun Exposure
- SWP DCN 5-27 Respirator Cleaning Practices
- SWP DCN 5-28 Safe Use Practices for Use of Respirators
- SWP DCN 5-29 Respirator Qualitative Fit Testing Procedures
- SWP DCN 5-30 Laboratory Soil Testing Safe Work Practices

Tasks Performed At Job Site that are NOT Covered by SWPs

NOTE: Many AHA's can be found on the Health & Safety intranet site at:
<http://home.ttemi.com/C18/Activity%20Hazard%20Analysis%20Docum/default.aspx>

Attach Activity Hazard Analysis (AHA) for each non-covered task

- (non-covered task)
- (non-covered task)
- (non-covered task)
- (non-covered task)

Tetra Tech Employee Training and Medical Requirements:
Basic Training and Medical

- Initial 40 Hour Training
- 8-Hour Supervisor Training (one-time)
- Current 8-Hour Refresher Training
- Current Medical Clearance (including respirator use)
- Current First Aid Training
- Current CPR Training
- Current Respirator Fit-Test

Other Specific Training and Medical Surveillance Requirements

- Confined Space Training
- Level A Training
- Radiation Training
- OSHA 10-hour Construction Safety Training
- OSHA 30-hour Construction Safety Training
- Asbestos Awareness Training
- Asbestos B-Reader X-Ray
- Blood Lead Level and ZPP Pre, during and Post-Project
- Urinary Arsenic Level Pre and Post-Project
- Other _____
- Other _____

Materials Present or Suspected at Site	Highest Observed Concentration (specify units and sample medium)	Exposure Limit (specify ppm or mg/m ³)	IDLH Level (specify ppm or mg/m ³)	Primary Hazards of the Material (explosive, flammable, corrosive, toxic, volatile, radioactive, biohazard, oxidizer, or other)	Symptoms and Effects of Acute Exposure	Photoionization Potential (eV)
Chlorine	Unknown	PEL = 1 ppm (C) REL = 0.5 ppm (C) TLV =	10 ppm	Toxic	Burning of eyes, nose, mouth; lacrimation (discharge of tears), rhinorrhea (discharge of thin mucus); cough, choking, substernal (occurring beneath the sternum) pain; nausea, vomiting; headache, dizziness; syncope; pulmonary edema; pneumonitis; hypoxemia (reduced oxygen in the blood); dermatitis; liquid; frostbite	11.48
Phosgene	Unknown	PEL = 0.1 mg/m ³ REL = 0.1 mg/m ³ TLV =	2 ppm	Toxic	Irritation eyes; dry burning throat; vomiting; cough, foamy sputum, breathing difficulty, chest pain, cyanosis; liquid: frostbite	11.55
Carbon Monoxide	Unknown	PEL = 50 ppme REL = 35 ppm (30-min) TLV =	1,200 ppm	Toxic	Headache, tachypnea, nausea, lassitude, dizziness, confusion, hallucinations; cyanosis; depressed S-T segment of electrocardiogram, angina, syncope	14.01
Hydrogen Chloride	Unknown	PEL = 5 ppm (C) REL = 5 ppm (C) TLV =	50 ppm	Toxic, corrosive	Irritation nose, throat, larynx; cough, choking; dermatitis; solution: eye, skin burns; liquid: frostbite; in animals: laryngeal spasm; pulmonary edema	12.74
Styrene	Unknown	PEL = 100 ppm REL = 50 ppm (ST 100) TLV =	700 ppm	Toxic	Irritation eyes, nose, respiratory system; headache, lassitude, dizziness, confusion, malaise (vague feeling of discomfort), drowsiness, unsteady gait; narcosis; defatting dermatitis; possible liver injury; reproductive effects	8.4
Vinyl Chloride	Unknown	PEL = 1 ppm (C 5) REL = Ca TLV =	Ca	Carcinogen	Lassitude; abdominal pain, gastrointestinal bleeding; enlarged liver; pallor or cyanosis of extremities; liquid: frostbite; [potential occupational carcinogen]	9.99
Sodium Cyanide	Unknown	PEL = 5 mg/m ³ TWA REL = 5 mg/m ³ (C) TLV =	25 mg/m ³	Toxic	Irritation eyes, skin; asphyxia; lassitude, headache, confusion; nausea, vomiting; increased respiratory rate; slow gasping respiration; thyroid, blood changes	NA
Phosphine	Unknown	PEL = 0.3 ppm TWA REL = 0.3 ppm TWA TLV =	50 ppm	Toxic	Nausea, vomiting, abdominal pain, diarrhea; thirst; chest tightness, dyspnea; muscle pain, chills; stupor or syncope; pulmonary edema; liquid: frostbite	9.96

Specify Information Sources: NIOSH Pocket Guide to Hazardous Chemicals, September 2005 and American Conference of Governmental Industrial Hygienists (ACGIH). "Threshold Limit Values and Biological Exposure Indices for 2011."

Note: In the Exposure Limit column, include Ceiling (C) and Short-Term Exposure Limits (STEL) if they are available. Also, use the following short forms and abbreviations to complete the table above.

IDLH = Immediately dangerous to life or health

mg/m³ = Milligram per cubic meter
NA = Not available

PEL = Permissible exposure limit
ppm = Part per million

REL = Recommended exposure limit
TLV = Threshold limit value

Note: If no contingency level of protection is selected, all employees covered under this plan must evacuate the immediate site area if air contaminant levels require upgrading PPE. Level A field work requires a Level 3 HASP. This information is available on the chemical hazards page of this HASP.

Field Activities Covered Under this HASP:

Task Description	Level of Protection ¹		Date of Activities
	Primary	Contingency	
1 Conduct air monitoring	<input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input checked="" type="checkbox"/> D	<input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input checked="" type="checkbox"/> D	7/27-31/12
2 Collect samples	<input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input checked="" type="checkbox"/> D	<input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input checked="" type="checkbox"/> D	7/27-31/12
3 Site entry	<input type="checkbox"/> A <input type="checkbox"/> B <input checked="" type="checkbox"/> C <input type="checkbox"/> D	<input type="checkbox"/> A <input checked="" type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D	
4	<input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D	<input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D	

Site Personnel and Responsibilities (include subcontractors):

Employee Name and Office Code / Location	Task(s)	Responsibilities
Brian Croft – Duluth, GA	1, 2, 3	<ul style="list-style-type: none"> Project Manager: Manages the overall project, makes site safety coordinator (SSC) aware of pertinent project developments and plans, and maintains communications with client as necessary. Additionally, for projects lasting longer than one consecutive week on-site, the PM is responsible for conducting one field audit using Form AF-1.
Randy Mayer – Duluth, GA	1, 2, 3	<ul style="list-style-type: none"> Field Team Leader: Directs field activities, makes site safety coordinator (SSC) aware of pertinent project developments and plans, and maintains communications with the Project Manager and the client as necessary
Bryan Vasser – Duluth, GA	1, 2, 3	<ul style="list-style-type: none"> Site Safety Coordinator (SSC): Ensures that appropriate personal protective equipment (PPE) is available, enforces proper use of PPE by on-site personnel and subcontractors; suspends investigative work if personnel are or may be exposed to an immediate health hazard; implements and enforces the HASP; identifies and controls site hazards when possible; communicates site hazards to all personnel; and reports any deviations observed from anticipated conditions described in the health and safety plan to the health and safety representative.
Brian Croft – Duluth, GA	1, 2,3	<ul style="list-style-type: none"> Alternate Site Safety Coordinator (if any)
Quinn Kelley – Duluth, GA Chris Jones – Duluth, GA Didi Fung – Duluth, GA John Schendel – Duluth, GA James Gooch – Duluth, GA Leslie Shaver – Duluth, GA	1, 2, 3	<ul style="list-style-type: none"> Field Personnel: Completes tasks as directed by the project manager, field team leader, and SSC, and follows the HASP and all SWPs and guidelines established in the Tetra Tech, Inc., Health and Safety Manual. Tetra Tech-hired subcontractor personnel on site (a subcontract SSC MUST be identified by name): Completes tasks as outlined in the project scope of work in accordance with the contract. Participates in all Tetra Tech on-site safety meetings and follows all procedures and guidelines established in this HASP, as well as the company health and safety plan and program.

Note. See next page for details on levels of protection

NOTE: Contingency level of protection section should be completed only if the upgraded level of protection is immediately available at the job site. If no contingency level of protection is denoted, all employees covered under this HASP must evacuate the immediate site area if air contaminant levels would require an upgrade of PPE.

Protective Equipment: (Indicate type or material as necessary for each task.)

Task	Primary Level of Protection (A,B,C,D)	PPE Component Description (Primary)	Contingency Level of Protection (A, B, C, D)	PPE Component Description (Contingency)
1	D	Respirator type: NA Cartridge type (if applicable): NA CPC material: NA Glove material(s): Nitrile (if needed) Boot material: Steel-toed Other: hard hat, safety glasses, safety vest	C	Respirator type: SCOTT AV3000 Cartridge type (if applicable): GME P100 CPC material: Saranex Glove material(s): Nitrile (inner), Butyl or Viton Outer Boot material: Butyl Rubber over leather steel-toed Other: Hard hat, safety vest
2	D	Respirator type: NA Cartridge type (if applicable): NA CPC material: NA Glove material(s): Nitrile (if needed) Boot material: Steel-toed Other: Hard hat, safety glasses, safety vest	C	Respirator type: SCOTT AV3000 Cartridge type (if applicable): GME P100 CPC material: Saranex Glove material(s): Nitrile (inner), Butyl or Viton Outer Boot material: Butyl Rubber over leather steel-toed Other: Hard hat, safety vest
3	C	Respirator type: SCOTT AV3000 Cartridge type (if applicable): GME P100 CPC material: Saranex Glove material(s): Nitrile (inner), Butyl or Viton Outer Boot material: Butyl Rubber over leather steel-toed Other: Hard hat, safety vest	B	Respirator type: SCOTT SCBA Cartridge type (if applicable): NA CPC material: Responder or appropriate Glove material(s): Nitrile (inner), Butyl or Viton Outer Boot material: Butyl Rubber over leather steel-toed Other: Hard hat, safety vest (if possible)
4		Respirator type: Cartridge type (if applicable): CPC material: Glove material(s): Boot material: Other:		Respirator type: Cartridge type (if applicable): CPC material: Glove material(s): Boot material: Other:
5		Respirator type: Cartridge type (if applicable): CPC material: Glove material(s): Boot material: Other:		Respirator type: Cartridge type (if applicable): CPC material: Glove material(s): Boot material: Other:

Respirator Notes:

Respirator cartridges may only be used for a maximum time of 8 hours or one work shift, whichever is less, and must be discarded at that time. For job sites with organic vapors, respirator cartridges may be used as described in this note as long as the concentration is less than 200 parts per million (ppm), the boiling point is greater than 70 °Celsius, and the relative humidity is less than 85 percent. If any of these levels are exceeded, a site-specific respirator cartridge change-out schedule must be developed and included in the HASP using Tetra Tech Form RP-2 (Respiratory Hazard Assessment Form)

Notes:

All levels of protection must include eye, head, and foot protection.

CPC = Chemical protective clothing

Thermoluminescent Dosimeter (TLD) Badges must be worn during all field activities on sites with radiation hazards. TLDs must be worn under CPC.

Monitoring Equipment: All monitoring equipment on site must be calibrated before and after each use and results recorded in the site logbook				
Instrument (Check all required)	Task	Instrument Reading	Action Guideline	Comments
<input checked="" type="checkbox"/> Combustible gas indicator model:	<input checked="" type="checkbox"/> 1	0 to 10% LEL	Monitor; evacuate if confined space	
	<input type="checkbox"/> 2			
	<input checked="" type="checkbox"/> 3	10 to 25% LEL	Potential explosion hazard; notify SSC	
	<input type="checkbox"/> 4			
	<input type="checkbox"/> 5	>25% LEL	Explosion hazard; interrupt task; evacuate site; notify SSC	
<input checked="" type="checkbox"/> Oxygen meter model:	<input checked="" type="checkbox"/> 1	>23.5% Oxygen	Potential fire hazard; evacuate site	
	<input type="checkbox"/> 2			
	<input checked="" type="checkbox"/> 3	23.5 to 19.5% Oxygen	Oxygen level normal	
	<input type="checkbox"/> 4			
	<input type="checkbox"/> 5	<19.5% Oxygen	Oxygen deficiency; interrupt task; evacuate site; notify SSC	
<input checked="" type="checkbox"/> Radiation survey meter model:	<input checked="" type="checkbox"/> 1	Normal background	Proceed	Annual exposure not to exceed 1,250 mrem per quarter Background reading must be taken in an area known to be free of radiation sources.
	<input type="checkbox"/> 2			
	<input checked="" type="checkbox"/> 3	Two to three times background	Notify SSC	
	<input type="checkbox"/> 4			
	<input type="checkbox"/> 5	>Three times background	Radiological hazard; interrupt task; evacuate site; notify RSO	
<input checked="" type="checkbox"/> Photoionization detector model: <input type="checkbox"/> 11.7 eV <input checked="" type="checkbox"/> 10.6 eV <input type="checkbox"/> 10.2 eV <input type="checkbox"/> 9.8 eV <input type="checkbox"/> Other (specify): _____	<input checked="" type="checkbox"/> 1	Any response above background to 5 ppm above background	Level B is recommended Level C ^a may be acceptable	These action levels are for unknown gases or vapors. After the contaminants are identified, action levels should be based on the specific contaminants involved.
	<input type="checkbox"/> 2			
	<input checked="" type="checkbox"/> 3	> 5 to 500 ppm above background	Level B	
	<input type="checkbox"/> 4			
	<input type="checkbox"/> 5	> 500 ppm above background	Level A	
<input checked="" type="checkbox"/> Flame ionization detector model:	<input checked="" type="checkbox"/> 1	Any response above background to 5 ppm above background	Level B is recommended Level C ^a may be acceptable	These action levels are for unknown gases or vapors. After the contaminants are identified, action levels should be based on the specific contaminants involved.
	<input type="checkbox"/> 2			
	<input checked="" type="checkbox"/> 3	>5 to 500 ppm above background	Level B	
	<input type="checkbox"/> 4			
	<input type="checkbox"/> 5	>500 above background	Level A	
<input checked="" type="checkbox"/> Detector tube models: Phosgene Vinyl Chloride Phosphine Sodium Cyanide	<input checked="" type="checkbox"/> 1	Specify: < ½ the PEL	Specify: Remove from area. Upgrade respiratory protection to B	The action level for upgrading the level of protection is one-half of the contaminant's PEL. If the PEL is reached, evacuate the site and notify a safety specialist
	<input type="checkbox"/> 2	> ½ the PEL		
	<input checked="" type="checkbox"/> 3			
	<input type="checkbox"/> 4			
	<input type="checkbox"/> 5			
<input checked="" type="checkbox"/> Single Point Monitor	<input checked="" type="checkbox"/> 1	Specify: HCL	Specify: Remove from area. Upgrade Respiratory protection to B	
	<input type="checkbox"/> 2	CL		
	<input type="checkbox"/> 3			
	<input type="checkbox"/> 4			
	<input type="checkbox"/> 5			

Notes:
 eV= electron volt LEL=Lower explosive limit mrem=Millirem PEL=Permissible exposure limit ppm=Part per million

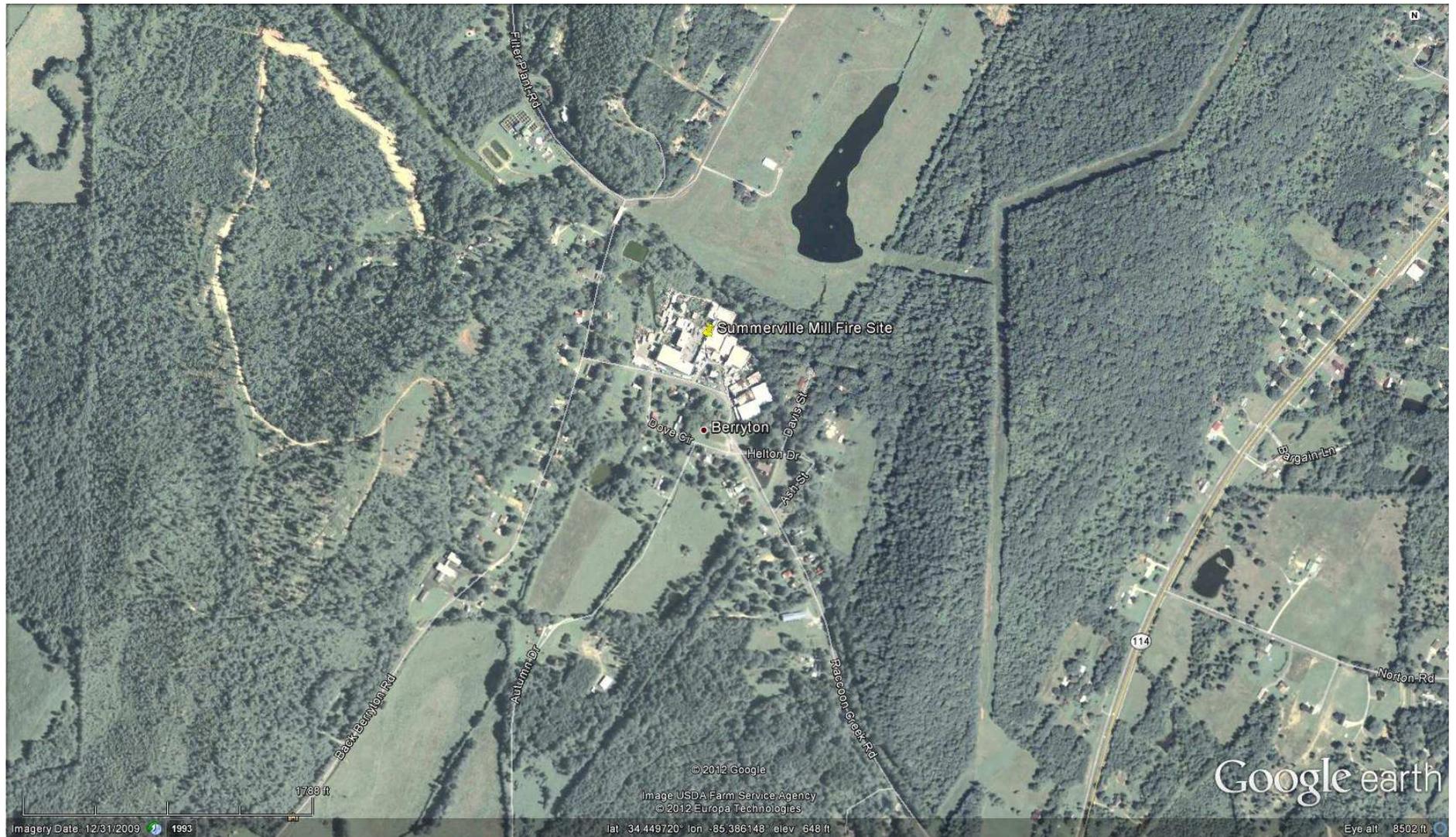
a. Level B is required when chemical hazards are present, but are uncharacterized. Level C may be acceptable for certain tasks in some situations. If you are uncertain, consult your RSO.

Project-Specific Industrial Hygiene Requirements	Emergency Contacts: Telephone No.																																
<p>OSHA-Regulated Chemicals*: <i>Check any present on the job site in any medium (air, water, soil)</i></p> <p><input type="checkbox"/> No chemicals below are located on the job site</p> <p><input type="checkbox"/> Friable Asbestos</p> <p><input type="checkbox"/> Silica, crystalline</p> <p><input type="checkbox"/> alpha-Naphthylamine</p> <p><input type="checkbox"/> Methyl chloromethyl ether</p> <p><input type="checkbox"/> 3,3'-Dichlorobenzidine (and its salts)</p> <p><input type="checkbox"/> bis-Chloromethyl ether</p> <p><input type="checkbox"/> beta-Naphthylamine</p> <p><input type="checkbox"/> Benzidine</p> <p><input type="checkbox"/> 4-Aminodiphenyl</p> <p><input type="checkbox"/> Ethyleneimine</p> <p><input type="checkbox"/> beta-Propiolactone</p> <p><input type="checkbox"/> 2-Acetylaminoflourene</p> <p><input type="checkbox"/> 4-Dimethylaminoazobenzene</p> <p><input type="checkbox"/> N-nitrosomethylamine</p> <p><input checked="" type="checkbox"/> Vinyl chloride</p> <p><input type="checkbox"/> Inorganic arsenic</p> <p><input type="checkbox"/> Lead</p> <p><input type="checkbox"/> Chromium (VI)</p> <p><input type="checkbox"/> Cadmium</p> <p><input type="checkbox"/> Benzene</p> <p><input type="checkbox"/> Coke oven emissions</p> <p><input type="checkbox"/> 1,2-Dibromo-3-chloropropane</p> <p><input type="checkbox"/> Acrylonitrile</p> <p><input type="checkbox"/> Ethylene oxide</p> <p><input type="checkbox"/> Formaldehyde</p> <p><input type="checkbox"/> Methylenedianiline</p> <p><input type="checkbox"/> 1,3-Butadiene</p> <p><input type="checkbox"/> Methylene chloride</p> <p> </p> <p>* NOTE: Many states, including California and New Jersey, have chemical-specific worker protection requirements and standards for many chemicals and known or suspected carcinogens.</p>	<table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:70%;">WorkCare and Incident Intervention</td> <td style="width:30%; text-align: right;">888.449.7787, or 800.455.6155</td> </tr> <tr> <td>Tetra Tech EMI 24-hour Anonymous Hazard Reporting Line</td> <td style="text-align: right;">866.383.8070</td> </tr> <tr> <td>U.S. Coast Guard National Response Center</td> <td style="text-align: right;">800.424.8802</td> </tr> <tr> <td>InfoTrac</td> <td style="text-align: right;">800.535.5053</td> </tr> <tr> <td>Poison Control</td> <td style="text-align: right;">800.222.1222</td> </tr> <tr> <td>Fire department</td> <td style="text-align: right;">911</td> </tr> <tr> <td>Police department</td> <td style="text-align: right;">911</td> </tr> </table> <p>Personnel Call-Down List:</p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:40%;">Job Title or Position:</th> <th style="width:30%;">Name</th> <th style="width:30%;">Cell Phone:</th> </tr> </thead> <tbody> <tr> <td>Regional Safety Officer</td> <td>Chris Draper</td> <td style="text-align: right;">615.969.1334</td> </tr> <tr> <td>Project Manager:</td> <td>Brian Croft</td> <td style="text-align: right;">206.300.0301</td> </tr> <tr> <td>Field Team Leader:</td> <td>Randy Mayer</td> <td style="text-align: right;">225.933.4534</td> </tr> <tr> <td>Site Safety Coordinator (SSC):</td> <td>Bryan Vasser</td> <td style="text-align: right;">678.662.8750</td> </tr> <tr> <td>Subcontractor SSC:</td> <td>NA</td> <td></td> </tr> </tbody> </table> <hr/> <p>Medical and Site Emergencies:</p> <p>Signal a site or medical emergency with three blasts of a loud horn (car horn, fog horn, or similar device). Site personnel should evacuate to the area of safe refuge designated on the site map.</p> <p>Hospital Name: Floyd Medical Center Address: 304 Turner McCall Blvd, Rome, GA 30165 General Phone: 706.509.5000 Emergency Phone: 911 Ambulance Phone: 911</p> <p>Hospital called to verify emergency services are offered? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/></p> <p>Step-by-step Route to Hospital: (see Page 11 of 12 for route map)</p> <ol style="list-style-type: none"> <li style="border-bottom: 1px solid #ccc; padding: 5px 0;"> 1. Start out going southeast on Raccoon Creek Rd toward Dove Cir. Map 0.9 MI <small>0.9 Mi Total</small> <li style="border-bottom: 1px solid #ccc; padding: 5px 0;"> 2. Turn left onto GA-114. Map 3.2 MI <small>4.1 Mi Total</small> <li style="border-bottom: 1px solid #ccc; padding: 5px 0;"> 3. Turn slight right onto US-27 / Rome Blvd / GA-1. Continue to follow US-27 S / GA-1 S. Map 22.7 MI <small>26.7 Mi Total</small> <li style="border-bottom: 1px solid #ccc; padding: 5px 0;"> 4. Turn left onto Turner McCall Blvd SW / Turner McCall Blvd NE / US-27 / GA-20 / GA-1. Map 0.06 MI <small>26.8 Mi Total</small> <li style="padding: 5px 0;"> 5. 304 TURNER MCCALL BLVD SW is on the right. Map 	WorkCare and Incident Intervention	888.449.7787, or 800.455.6155	Tetra Tech EMI 24-hour Anonymous Hazard Reporting Line	866.383.8070	U.S. Coast Guard National Response Center	800.424.8802	InfoTrac	800.535.5053	Poison Control	800.222.1222	Fire department	911	Police department	911	Job Title or Position:	Name	Cell Phone:	Regional Safety Officer	Chris Draper	615.969.1334	Project Manager:	Brian Croft	206.300.0301	Field Team Leader:	Randy Mayer	225.933.4534	Site Safety Coordinator (SSC):	Bryan Vasser	678.662.8750	Subcontractor SSC:	NA	
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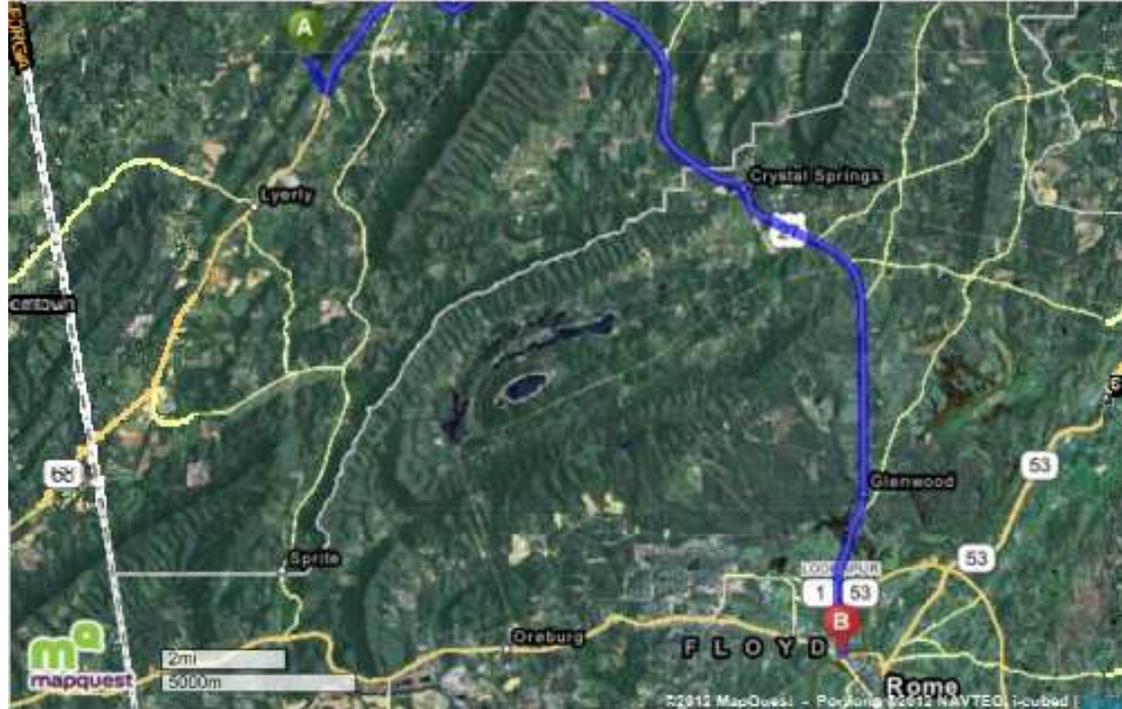
Note: This page must be posted on site.

Decontamination Procedures		Emergency Response Planning
<p>The site safety coordinator oversees implementation of project decontamination procedures and is responsible for ensuring they are effective.</p>		<p>During the pre-work briefing and daily tailgate safety meetings, all on-site employees will be trained in the provisions of emergency response planning, site communication systems, and site evacuation routes.</p>
<p>Personnel Decontamination</p> <p>Level D Decon - <input type="checkbox"/> Wet <input checked="" type="checkbox"/> Dry</p> <p>Level C Decon - <input type="checkbox"/> Wet <input checked="" type="checkbox"/> Dry</p> <p>Level B Decon – Briefly outline the level B decontamination methods to be used on a separate page attached to this HASP.</p> <p>Level A Decon – A Level 3 HASP is required. Notify your regional health and safety representative and health and safety director.</p> <p>Equipment Decontamination</p> <p>All tools, equipment, and machinery from the Exclusion Zone (hot) or Contamination Reduction Zone (warm) are decontaminated in the CRZ before they are removed to the Support Zone (cold). Equipment decontamination procedures are designed to minimize the potential for hazardous skin or inhalation exposure, cross-contamination, and chemical incompatibilities.</p> <p>Respirator Decontamination</p> <p>Respirators are decontaminated in compliance with SWP 5-27 and should be included with this HASP.</p> <p>Waste Handling for Decontamination</p> <p>Procedures for decontamination waste disposal meet all applicable local, state, and federal regulations.</p>	<p>Decontamination Equipment</p> <p><input type="checkbox"/> Washtubs</p> <p><input checked="" type="checkbox"/> Buckets</p> <p><input checked="" type="checkbox"/> Scrub brushes</p> <p><input type="checkbox"/> Pressurized sprayer</p> <p><input type="checkbox"/> Detergent [Luminox]</p> <p><input type="checkbox"/> Solvent [Type]</p> <p><input type="checkbox"/> Household bleach solution</p> <p>Concentration/Dilution: _____</p> <p><input checked="" type="checkbox"/> Deionized water</p> <p><input checked="" type="checkbox"/> Disposable sanitizer wipes</p> <p><input type="checkbox"/> Facemask sanitizer powder</p> <p><input type="checkbox"/> Wire brush</p> <p><input checked="" type="checkbox"/> Spray bottle</p> <p><input type="checkbox"/> Tubs / pools</p> <p><input type="checkbox"/> Banner/barrier tape</p> <p><input checked="" type="checkbox"/> Plastic sheeting</p> <p><input type="checkbox"/> Tarps and poles</p> <p><input checked="" type="checkbox"/> Trash bags</p> <p><input type="checkbox"/> Trash cans</p> <p><input checked="" type="checkbox"/> Duct tape</p> <p><input checked="" type="checkbox"/> Paper towels</p> <p><input checked="" type="checkbox"/> Folding chairs</p> <p><input type="checkbox"/> Other</p>	<p>In the event of an emergency that necessitates evacuation of a work task area or the site, the following procedures will take place.</p> <ul style="list-style-type: none"> • The Tetra Tech SSC will contact all nearby personnel using the on-site communications to advise the personnel of the emergency. • The personnel will proceed along site roads to a safe distance upwind from the hazard source. • The personnel will remain in that area until the SSC or an authorized individual provides further instructions. <p>In the event of a severe spill or a leak, site personnel will follow the procedures listed below.</p> <ul style="list-style-type: none"> • Evacuate the affected area and relocate personnel to an upwind location. • Inform the Tetra Tech SSC, a Tetra Tech office, and a site representative immediately. • Locate the source of the spill or leak, and stop the flow if it is safe to do so. • Begin containment and recovery of spilled or leaked materials. • Notify appropriate local, state, and federal agencies. <p>In the event of severe weather, site personnel will follow the procedures listed below.</p> <ul style="list-style-type: none"> • Site work shall not be conducted during severe weather, including high winds and lightning. • In the event of severe weather, stop work, lower any equipment (drill rigs) and evacuate the affected area. • Severe weather may cause heat or cold stress. Refer to SWPs 5-15 and 5-16 for information on both. <p>All work-related incidents must be reported. According to TtEMI's reporting procedures, for non-emergency incidents you should:</p> <ul style="list-style-type: none"> • Notify WorkCare and Incident Intervention at 888.449.7787, or 800.455.6155 • Notify your Project Manager or Regional Safety Officer (RSO) via phone immediately. • Complete a "Tetra Tech Incident Report" (Form IR) within 24 hours and send it to your RSO. If an injury or illness has occurred, the Form IR-A and the WorkCare HIPAA form must be completed at the same time the Form IR is completed.

Site Map



Hospital Route Map



850 Raccoon Creek Rd, Summerville, GA 30747-7210



1. Start out going southeast on Raccoon Creek Rd toward Dove Cir. [Map](#)

0.9 MI

0.9 Mi Total



2. Turn left onto GA-114. [Map](#)

3.2 MI

4.1 Mi Total



3. Turn slight right onto US-27 / Rome Blvd / GA-1. Continue to follow US-27 S / GA-1 S. [Map](#)

22.7 MI

26.7 Mi Total



4. Turn left onto Turner McCall Blvd SW / Turner McCall Blvd NE / US-27 / GA-20 / GA-1. [Map](#)

0.06 MI

26.8 Mi Total



5. 304 TURNER MCCALL BLVD SW is on the right. [Map](#)



304 Turner McCall Blvd SW, Rome, GA 30165-5621

Note: A dry-run should be conducted to establish a physical location associated with the map included in the HASP. Verbal verification from the hospital emergency room should also be obtained to ensure that the hospital will accept chemically contaminated patients.

APPROVAL AND SIGN-OFF FORM

Project No.: TTEMI-05-001-0181

I have read, understood, and agree with the information set forth in this Health and Safety Plan and will follow the direction of the Site Safety Coordinator (SSC) as well as procedures and guidelines established in the Tetra Tech, Inc., Health and Safety Manual. I understand the training and medical requirements for conducting field work and have met these requirements.

Tetra Tech has prepared this plan solely for the purpose of the health and safety protection of Tetra Tech employees. Subcontractors, visitors, and others at the site, while required to read and follow the provisions outlined in this plan at a minimum, should refer to their safety program for specific information related to their health and safety protection.

Name	Company / Agency / Organization	Signature	Date

I have read, understood, and agree with the information set forth in this Health and Safety Plan and comply with and will enforce this HASP, as well as procedures and guidelines established in the Tetra Tech, Inc., Health and Safety Manual.

Name	Project-Specific Position	Signature	Date
Brian Croft	Project Manager		
Randy Mayer	Field Team Leader		
Bryan Vasser	Site Safety Coordinator		
	Subcontractor SSC		
	Subcontractor SSC		

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Note: Use Additional sheets as necessary to ensure that all personnel sign and affirm this document.



VOLUNTARY PROTECTION PROGRAM



Management Leadership

Lead by example. Good managers recognize the benefits of a strong safety program and ensure that their personnel and subcontractors have the right tools, equipment, and attitude to work safely.

Some areas where effective management leadership for safety can be demonstrated include:

- Provide visible safety leadership - start meetings with a safety topic, integrate safety into planning, scheduling, and budgeting processes, take personal action to resolve safety issues.
- Become involved in incident reporting, investigation, corrective action - share lessons learned.
- Include subcontractors in your safety program and oversee their work.

Employee Involvement

Get involved! Take personal action and work directly with your supervisor daily to identify, control, or eliminate potential safety hazards.

Other ways to become involved in the safety program and improve work conditions include:

- Initiate hazard reports to identify hazards, suggest improvements, and recognize safe behaviors
- Participate in safety meetings and worksite safety inspections (daily, weekly, monthly, and quarterly)
- Participate in incident reports, investigations, corrective actions, and Lessons Learned

Worksite Analysis

The process of identifying and evaluating potential hazards is a critical element in achieving zero incidents and creating low risk and hazard-free work areas.

Worksite analysis methods used to identify and evaluate potential hazards include:

- Safety inspections (daily, weekly, monthly, and quarterly)
- Develop or review safe work procedures, AHA's, and the HASP
- Monitoring for air quality, heat stress, noise, ergonomics and other job hazards

Hazard Prevention and Control

Eliminating hazards from your job, preventing new hazards, and controlling known hazards are fundamental parts of the projects safety program.

Important points include:

- Control hazards by:
 - Installing and maintaining **Engineering Controls**
 - Following **Administrative/Work Practice Controls** (HASP, AHAs, and safe work practices)
 - Specifying and wearing **Personal Protective Equipment** where needed
- Perform integrated safety reviews for new or modified work tasks
- Consult with qualified medical and safety professionals as needed

Safety and Health Training

Effective safety training is an important element in incident prevention. Remember, if you are unfamiliar with the work or feel that you don't have the necessary training, speak up and notify your team leader or project manager.

Safety training methods that may be used at the project include:

- New employee orientation, including HASP and task-specific training
- Project meetings, daily briefings, and/or task briefings
- Lessons learned and monthly safety communications

Name

Signature



TETRA TECH EM INC.
HEALTH AND SAFETY PLAN AMENDMENT

Site Name: _____

Amendment Date: _____

Purpose or Reason for Amendment: _____

Required Additional Safe Work Practices or Activity Hazard Analyses: _____

Required Changes in PPE: _____

Action Level Changes: _____

AMENDMENT APPROVAL

RSO or Designee

Name

Signature

Date

Site Safety
Coordinator

Name

Signature

Date

Date presented during daily site safety meeting: _____



TETRA TECH, INC.
FIELD AUDIT CHECKLIST

Project Name: _____ Project No.: _____

Field Location: _____ Completed by: _____

Project Manager: _____ Site Safety Coordinator: _____

General Items		In Compliance?		
		Yes	No	NA
Health and Safety Plan Requirements				
1	Approved health and safety plan (HASP) on site or available			
2	Names of on-site personnel recorded in field logbook or daily log			
3	HASP compliance agreement form signed by all on-site personnel			
4	Material Safety Data Sheets on site or available			
5	Designated site safety coordinator physically present on jobsite			
6	Daily tailgate safety meetings conducted and documented on Form HST-2			
7	Documentation available proving compliance with HASP requirements for medical examinations, fit testing, and training (including subcontractors)			
8	HASP onsite matches scope of work being conducted			
9	Emergency evacuation plan in place and hospital located			
10	Exclusion, decontamination, and support zones delineated and enforced			
11	HASP attachments present onsite (VPP sheet, audit checklist, AHA, etc.)			
12	Illness and injury prevention program reports completed (California only)			
Emergency Planning				
13	Emergency telephone numbers posted			
14	Emergency route to hospital posted			
15	Local emergency providers notified of site activities			
16	Adequate safety equipment inventory available			
17	First aid provider and supplies available			
18	Eyewash solution available when corrosive chemicals are present			
Air Monitoring				
19	Monitoring equipment specified in HASP available and in working order			
20	Monitoring equipment calibrated and calibration records available			
21	Personnel know how to operate monitoring equipment and equipment manuals available on site			
22	Environmental and personnel monitoring performed as specified in HASP			

Safety Items		In Compliance?		
Personal Protection		Yes	No	NA
23	Splash suit, if required			
24	Chemical protective clothing, if required			
25	Safety glasses or goggles (always required)			
26	Gloves, if required			
27	Overboots, if required			
28	Hard hat (always required)			
29	High visibility vest, if required			
30	Hearing protection, if required			
31	Full-face respirator, if required			
Instrumentation				
32	Combustible gas meter and calibration notes			
33	Oxygen meter and calibration notes			
34	Organic vapor analyzer and calibration notes			
Supplies				
35	Decontamination equipment and supplies			
35	Fire extinguishers			
37	Spill cleanup supplies			
Corrective Action Taken During Audit:				

Note: NA = Not applicable

Auditor's Signature

Site Safety Coordinator's Signature

Date